Parcel UC-3

HPNS BCT

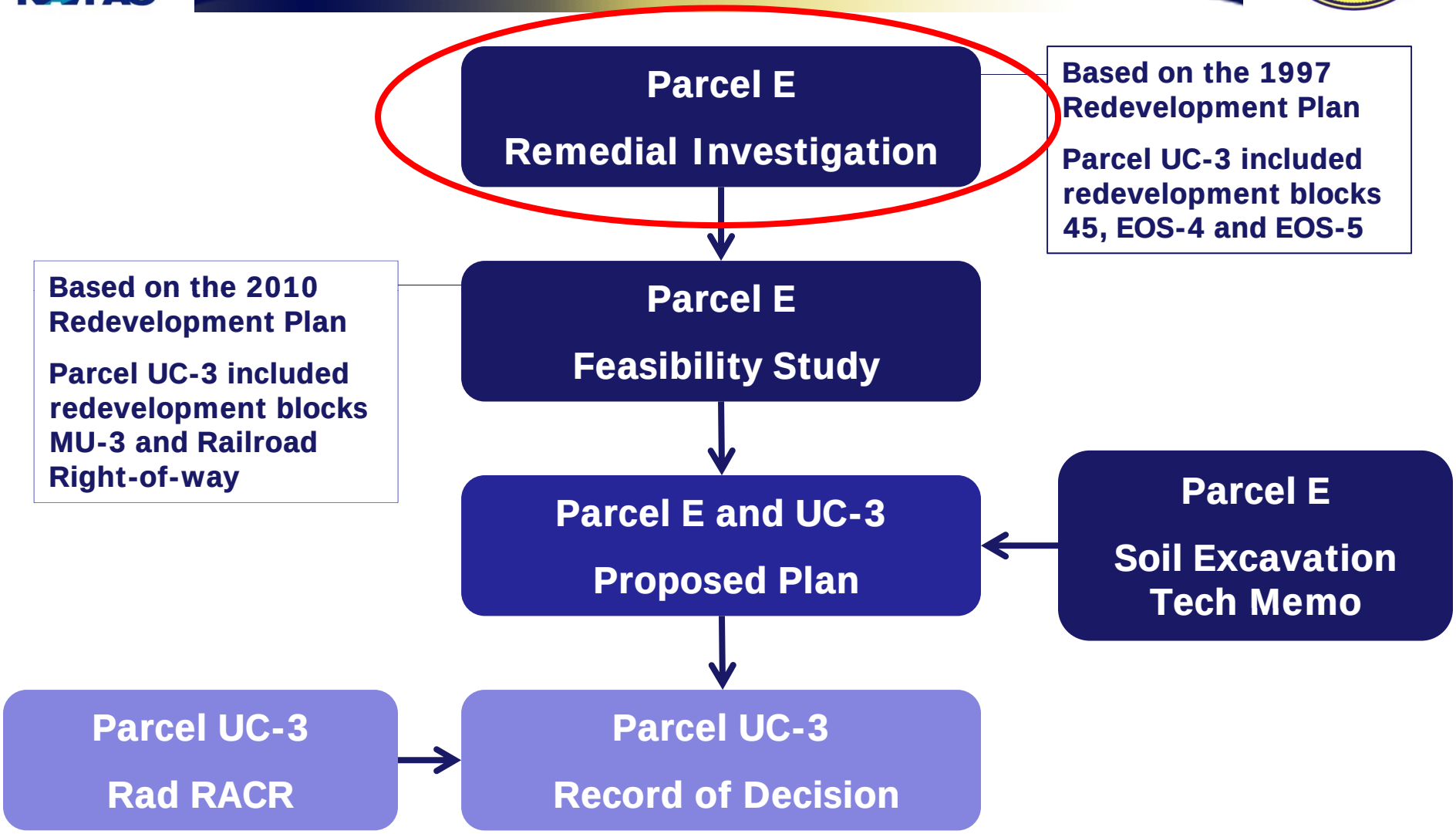
October 24, 2013

Parcel UC-3 Summary

The Parcel UC-3 ROD primarily consists of information from the following documents:

- Parcel E Remedial Investigation (May, 2008)
- Parcel E Groundwater Treatability Study Technical Report (February, 2011)
- Parcel UC-3 Radiological Removal Action Completion Report (March, 2012)
- Parcel E Feasibility Study (August, 2012)
- Parcel E and Parcel UC-3 Proposed Plan (February, 2013)
- Parcel E Soil Excavation Characterization Technical Memorandum (June, 2013)

Parcel UC-3 Summary



Parcel E Remedial Investigation
May 2008

- Based on the 1997 Redevelopment Plan
- Screened data using residential and industrial screening criteria
- Human health risk evaluated for various exposure scenarios
  - Planned Reuse (as of 1997)
  - Residential
  - Industrial
  - Recreational
  - Construction Worker
- Ecological Risk Assessment completed
  - No ecological concerns were found in the Parcel UC-3 Area

IR Sites within Parcel UC-3

IR Site	Description
IR-52	• Railroad and its surrounding right-of-way • Leased to Triple A in 1976 • Stained soil, spilled paint, household waste and abandoned buildings observed during past investigations
IR-56 (partial)	• Railroad Yard Area (also contains Building 809 and Area West of Building 809 which are outside of UC-3) • Use of wood preservatives and railroad cleaning solvents suspected • Evidence of paint leakage from storage containers found on site

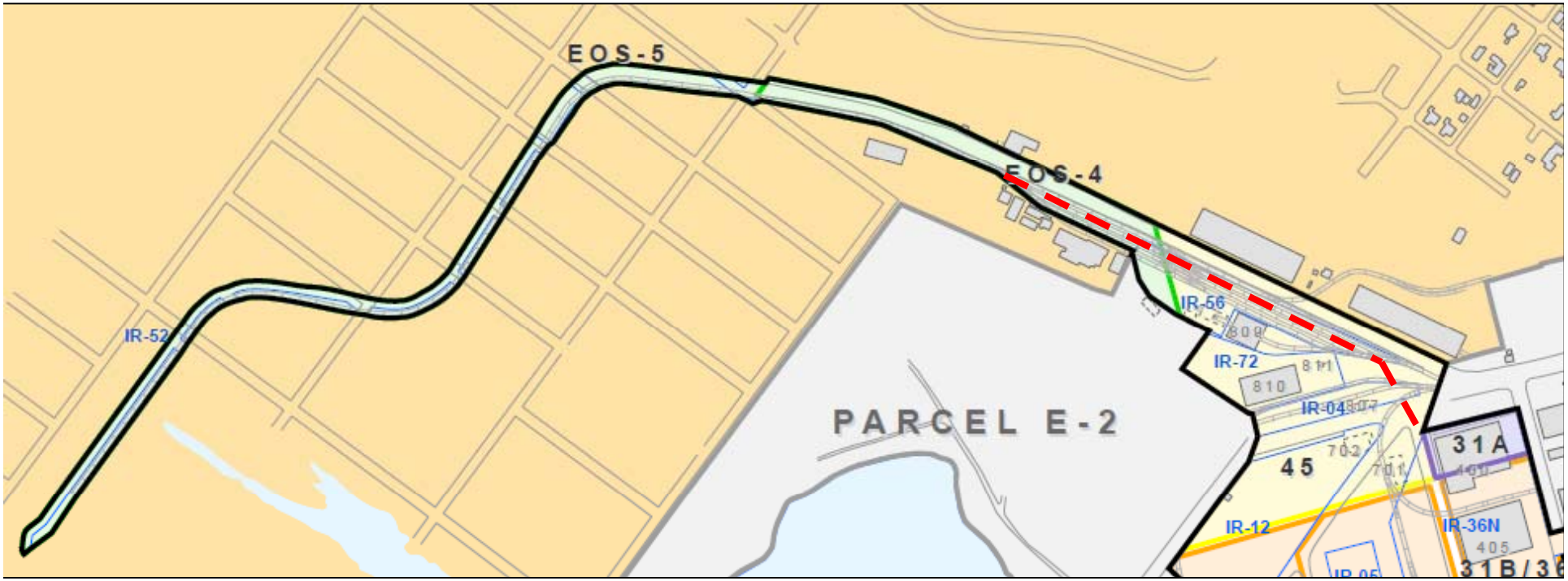
IR-04 (partial)	• Scrap yard and scrap material area
	  • Navy stored used submarine batteries, electrical capacitors and steel
	• Leased to Triple A in 1976; also used as a scrap yard
	  • Drums, pipe lagging, batteries, liquid wastes and scrap metal found at the site
	• Stained soil observed at the site

IR-45 (partial)	• Base-wide steam line system • Triple A suspected of using the steam line system to transport waste oil

Note that Site IR 74, bordering Parcel UC-3 is a FUD site and not in the BRAC program. This site was not addressed in the Parcel E RI or FS and will be removed in the Final ROD

Parcel E Remedial Investigation
May 2008

- Parcel UC-3 includes three of the Redevelopment Units
  - All of EOS-5
  - Most of EOS-4
  - A small part of Redevelopment Block 45



RI Summary: EOS-5

- Site IR 52 is contained completely within EOS-5
- Planned Reuse (1997): Open Space
- 1 of 39 soil samples contained metals above the industrial screening criteria

Results Exceeding Screening Criteria

Point ID	Analyte	Result (mg/kg)	Screening Criteria (mg/kg)		Top Depth (ft bgs)	Bottom Depth (ft bgs)	Result/ Screening Criterion
PA52SS06	ARSENIC	12.8	11.1	HPAL	0.75	0.75	1.2
PA52SS06	LEAD	1,280	800	Industrial	0.75	0.75	1.6

- 1 of 39 soil samples contained SVOCs above the industrial screening criteria

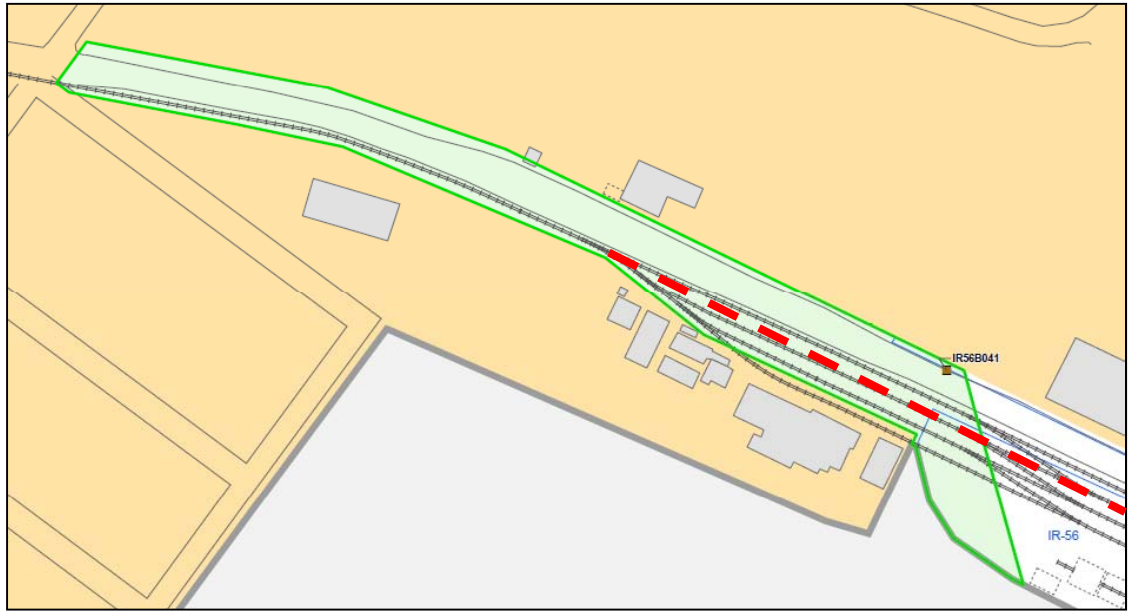
Results Exceeding Screening Criteria

Point ID	Analyte	Result (mg/kg)	Screening Criteria (mg/kg)		Top Depth (ft bgs)	Bottom Depth (ft bgs)	Result/ Screening Criterion
IR52B009	BENZO(A)ANTHRACENE	8.8	1.8	Industrial	3.75	3.75	4.9
IR52B009	BENZO(A)PYRENE	13.0	0.2	Industrial	3.75	3.75	72
IR52B009	BENZO(B)FLUORANTHENE	21.0	1.8	Industrial	3.75	3.75	11.7
IR52B009	BENZO(K)FLUORANTHENE	3.5	1.8	Industrial	3.75	3.75	1.9
IR52B009	DIBENZ(A,H)ANTHRACENE	1.7	0.3	Industrial	3.75	3.75	5.9
IR52B009	INDENO(1,2,3-CD)PYRENE	5.2	1.8	Industrial	3.75	3.75	2.9

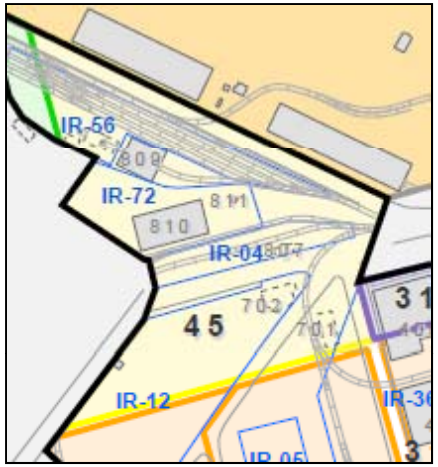
- No other soil samples had concentrations above the industrial screening criteria

RI Summary: EOS-4

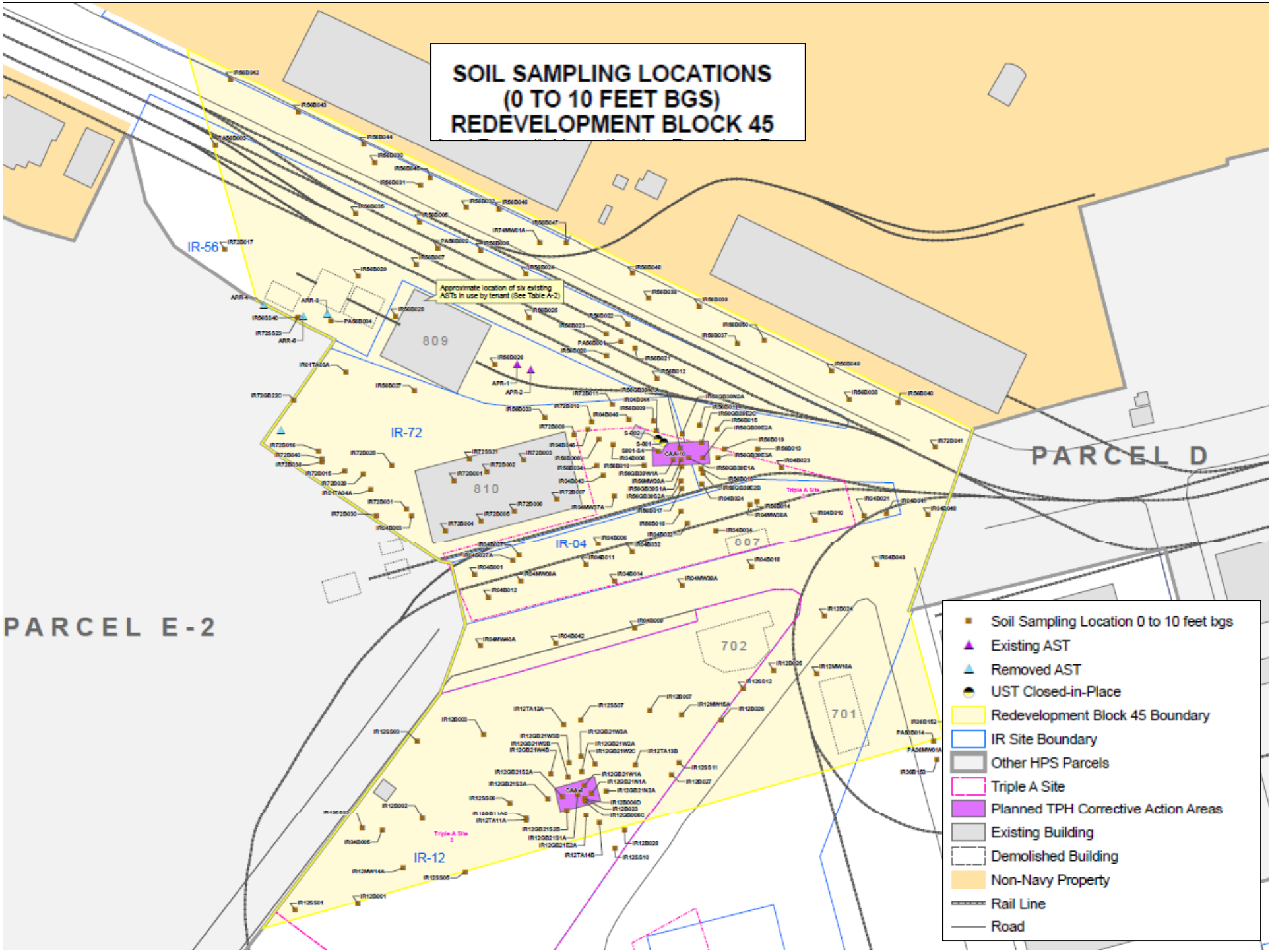
- A small portion of IR-56 is within EOS-4, but outside of UC-3 boundary
  - IR-56 is within the UC-3 boundary in Block 45
- Contains railroad tracks leaving the former Golden Gate Railroad Museum and merging onto EOS-5
- Planned Reuse (1997): Not identified
- No areas exceeding the Parcel E screening criteria were identified
- There have been no reports of observed chemical releases (such as stained soil)



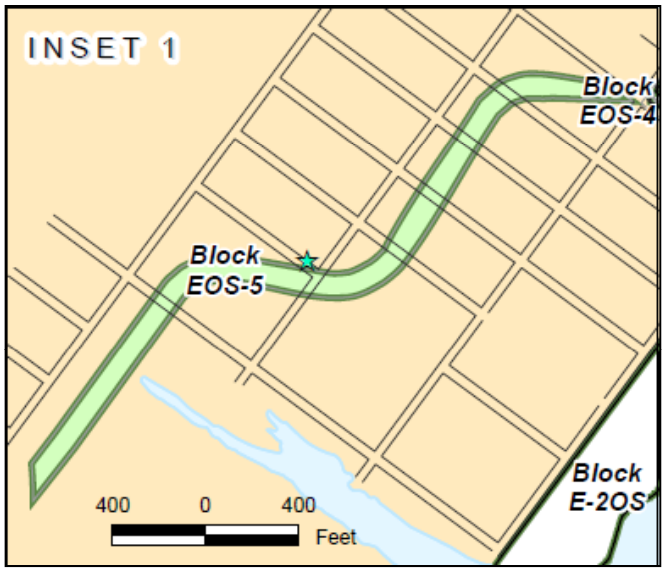
RI Summary: Redevelopment Block 45

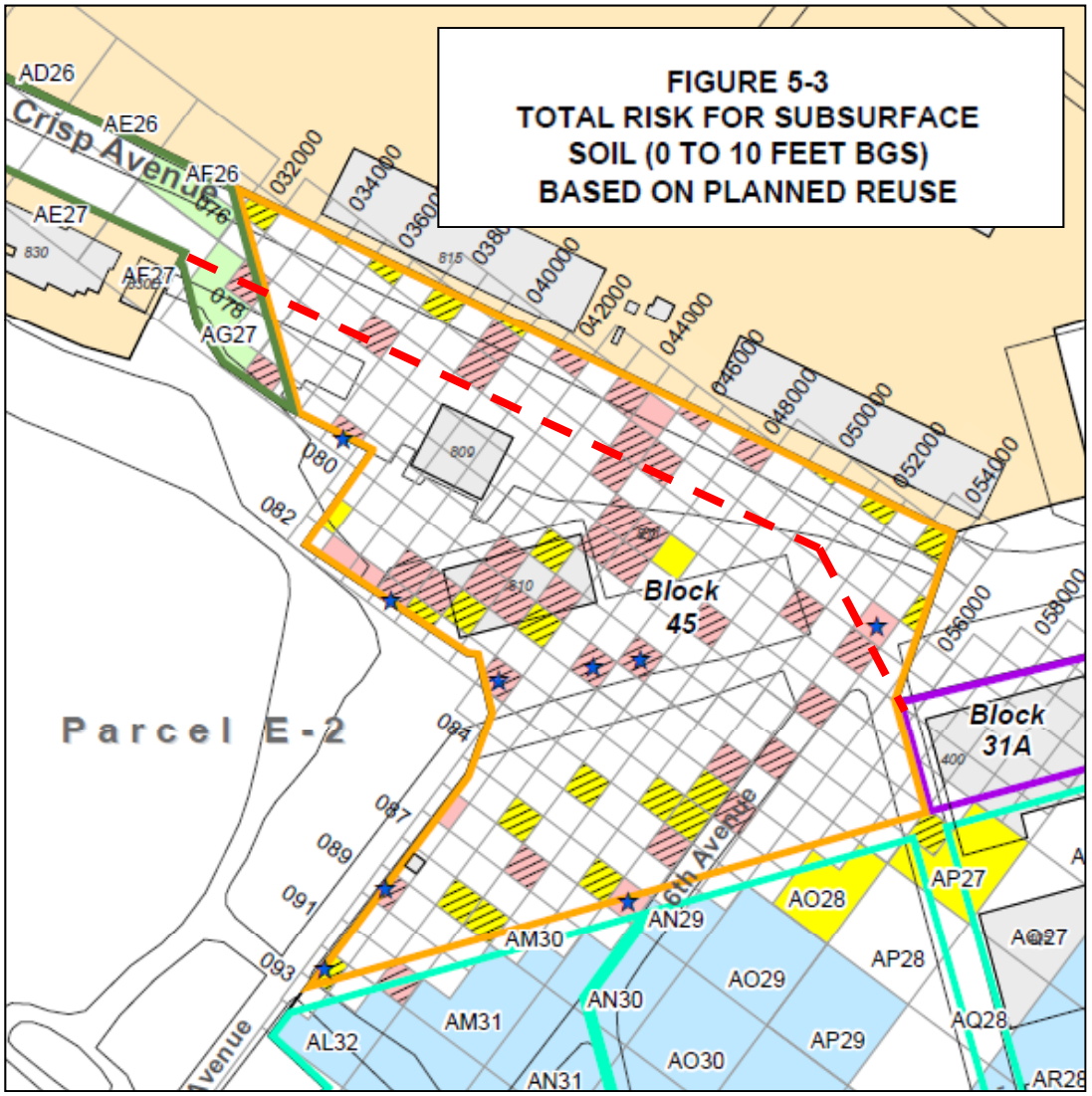


- A small portion of IR-04 and IR-56 is within Block 45
- Planned Reuse (1997): Research and Development
- Elevated concentrations of metals above the residential screening criteria were found throughout Block 45
- SVOCs above the residential screening criteria were found at several isolated locations
- One pesticide (dieldrin) concentration (outside of Parcel UC-3) was above the residential screening criteria
- One PCB concentration (outside of Parcel UC-3) was above the residential screening criteria
- 13 samples had TPH concentrations above the screening criteria
  - One location is within Parcel UC-3, TPH is mostly in the southern portion of Block 45
- Two groundwater plumes identified in the RI
  - One plume is in Parcel UC-3; detections of TCE was above the vapor intrusion criteria


SOIL SAMPLING LOCATIONS
(0 TO 10 FEET BGS)
REDEVELOPMENT BLOCK 45
IR-56
IR-72
IR-04
IR-12
PARCEL E-2
PARCEL D
809
810
807
702
701
Aproximate location of six existing ASTs in use by tenant (See Table A-2)
Soil Sampling Location 0 to 10 feet bgs
Existing AST
Removed AST
UST Closed-in-Place
Redevelopment Block 45 Boundary
IR Site Boundary
Other HPS Parcels
Triple A Site
Planned TPH Corrective Action Areas
Existing Building
Demolished Building
Non-Navy Property
Rail Line
Road

HHRA Summary
Soil





- Residential Lead Concentration > 155 mg/kg
- Recreational Lead Concentration > 155 mg/kg
- Industrial Lead Concentration > 800 mg/kg
- Residential Cancer Risk > 1E-06
- Industrial Cancer Risk > 1E-06
- Recreational Cancer Risk > 1E-06
- Residential, Industrial, or Recreational Cancer Risk ≤ 1E-06
- Highest Segregated Hazard Index >1.0
- No Data

HHRA Summary

The Proposed Plan used the HHRA tables in the RI to summarize the human health risk based on 2010 Redevelopment Plan:

Cancer Risks and Noncancer Hazards, Soil

Reuse Area	Parcel	Exposure Scenario	Chemical Cancer Risk	Hazard Index
MU-3	E / UC-3[a]	Residential	1 in 1,000	65
Railroad Right-of-Way	UC-3	Industrial	5 in 100,000	<1

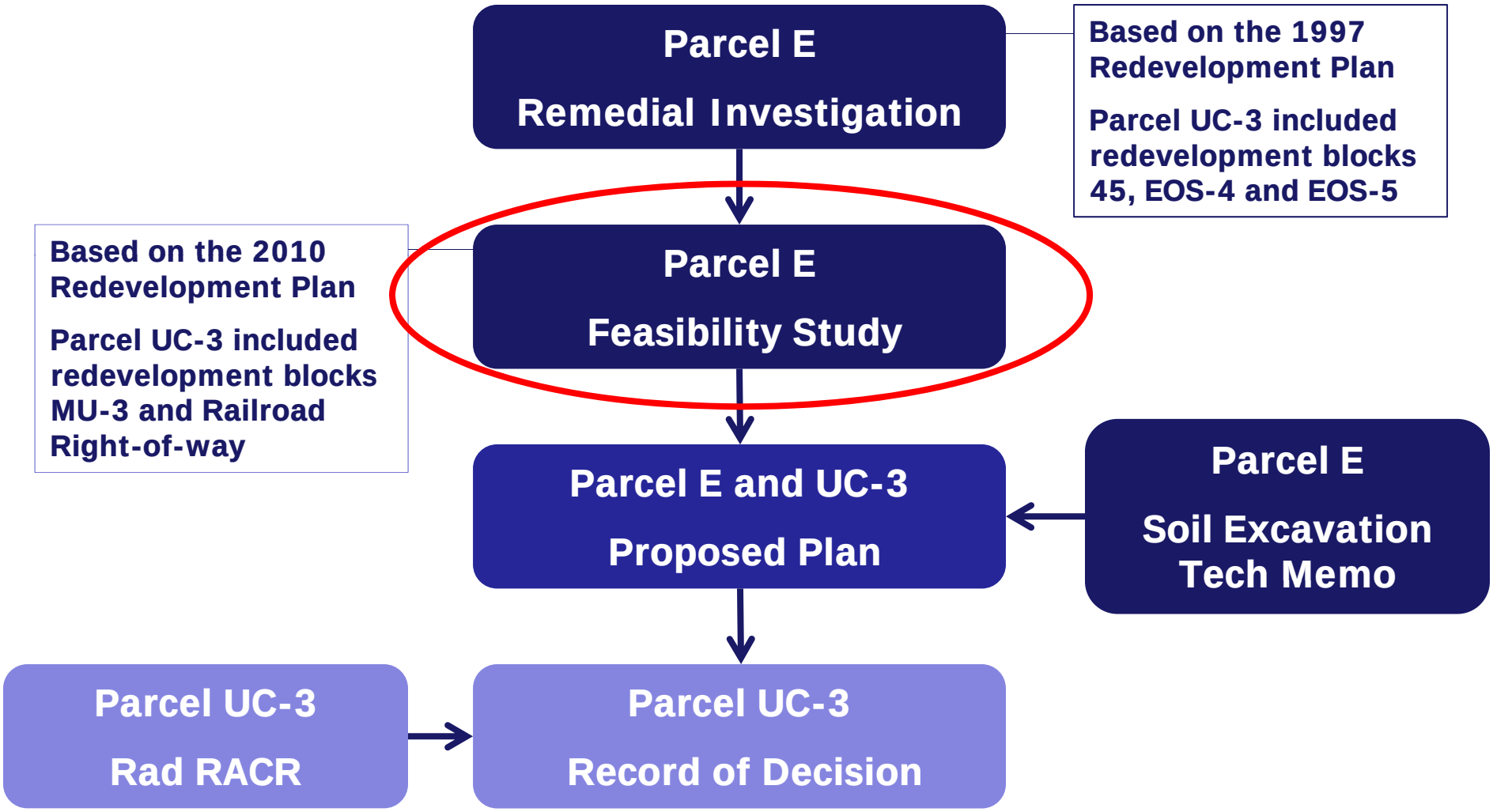
Notes:
Listed risk value is maximum in each reuse area; risk is based on conditions before cleanup (including prior to interim removal actions).
[a] HHRA completed for entire MU-3 reuse area, which includes a portion of Parcel E and Parcel UC-3.

Cancer Risks and Noncancer Hazards, Groundwater

Reuse Area	Parcel	Exposure Scenario	Chemical Cancer Risk	Hazard Index
Breathing Indoor Air from Shallow Groundwater				
MU-3	E / UC-3a	Residential	8 in 100,000	2.9

Notes:
Listed risk value is maximum in the reuse area; risk is based on conditions before cleanup (including prior to interim removal actions).
[a] HHRA completed for entire MU-3 reuse area, which includes a portion of Parcel E and Parcel UC-3.

Parcel UC-3 Summary

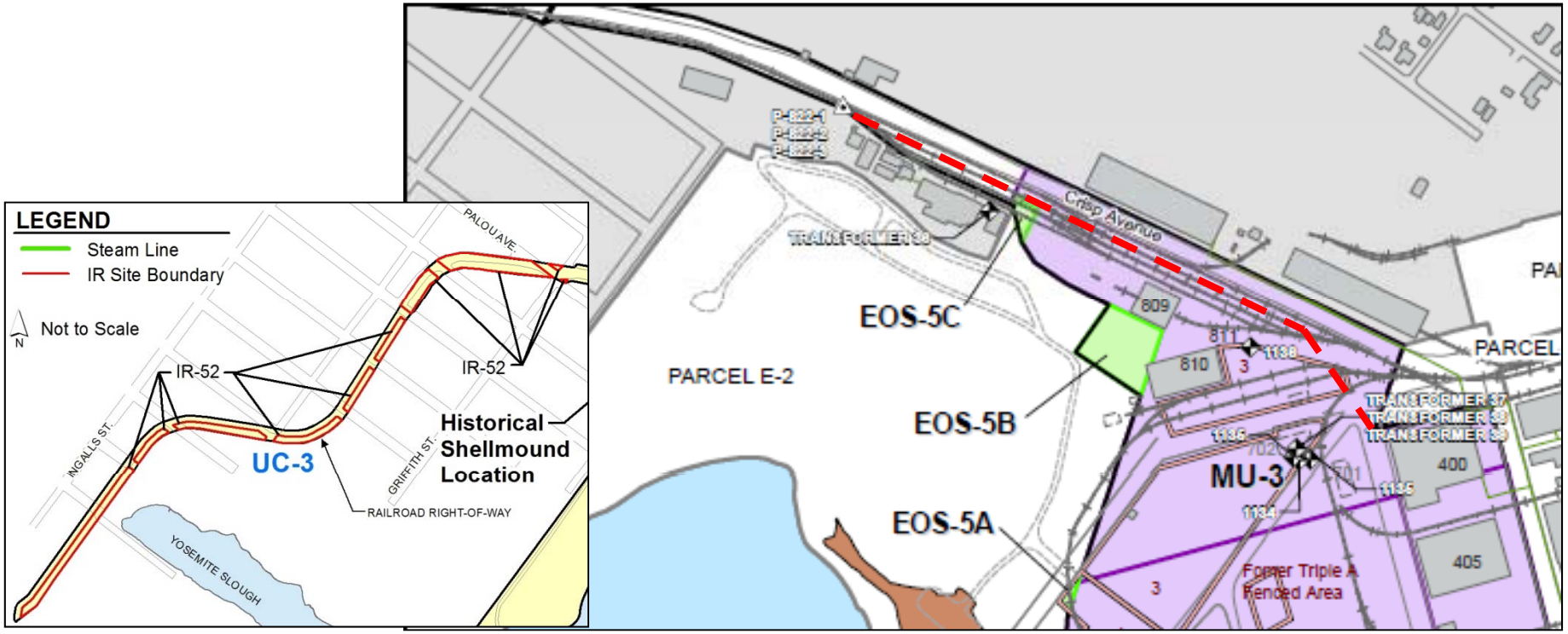


Parcel E Feasibility Study
August 2012

- Based on the 2010 Redevelopment Plan
- Evaluated alternatives for soil, groundwater, the shore line area and NAPL sites
- Focused excavation options on removing
  1. COCs at concentrations significantly exceeding PRGs (by either 5 or 10 times) and
  2. COCs indicative of a source to groundwater contamination
- Updated the groundwater plume maps based on the most recent data

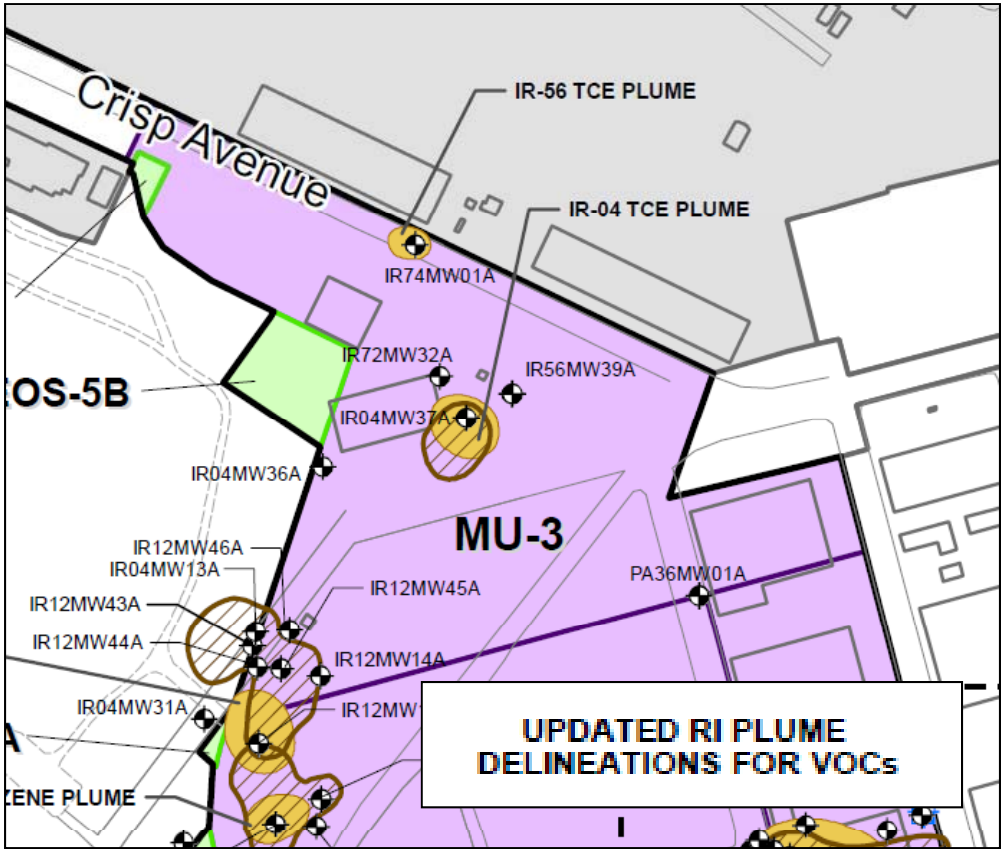
Parcel E Feasibility Study
August 2012

- Parcel UC-3 contains two redevelopment units
  - Railroad Right-of-Way: Industrial Use
  - MU-3 (partially): Mixed Use
- No redevelopment unit was identified for the former EOS-4 redevelopment block



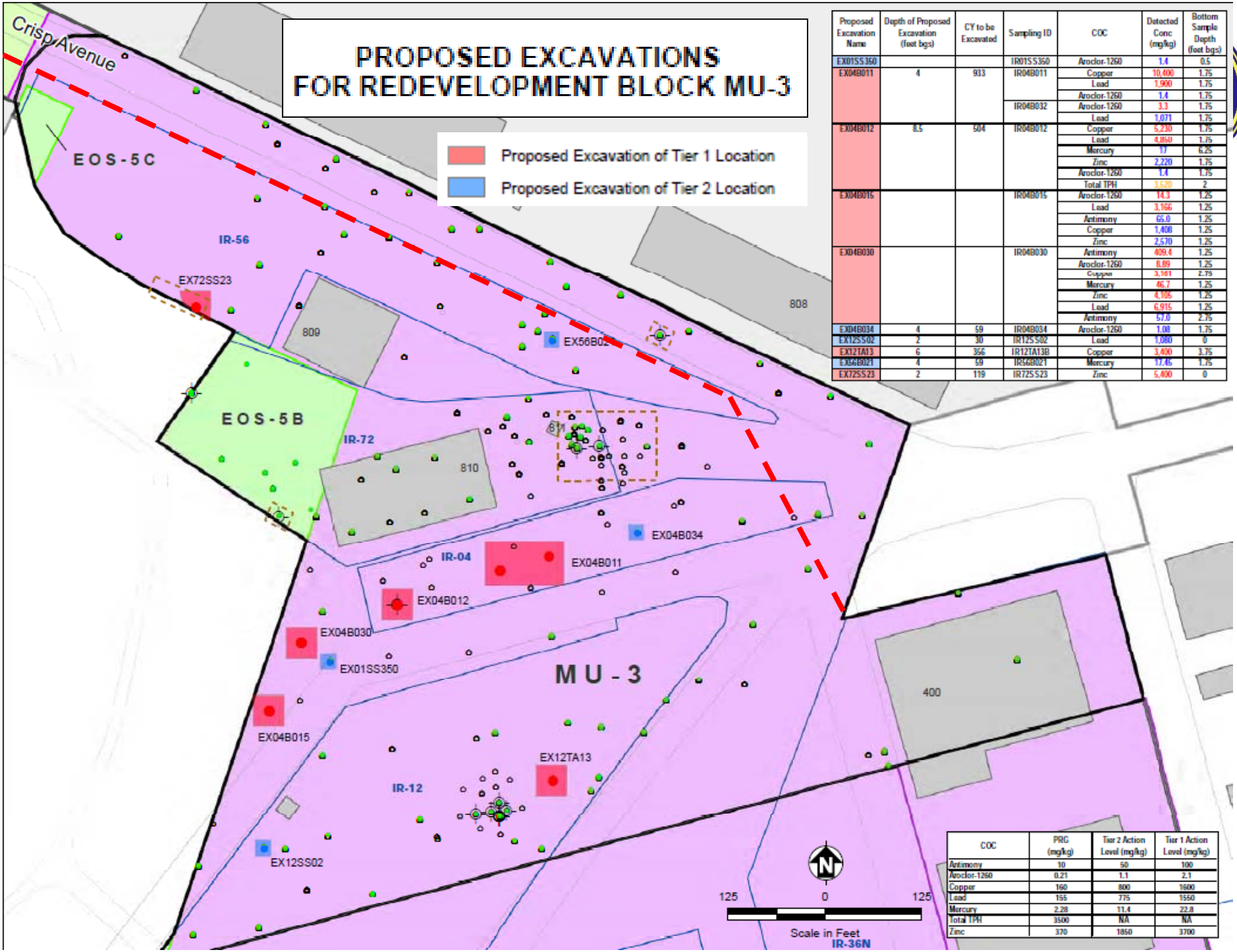
Parcel E Feasibility Study
Updated Groundwater Plumes

- The Feasibility Study updated the plumes based on samples collected as part of Basewide Groundwater Monitoring (2005-2009) and the Groundwater Treatability Study (2009)



Parcel E Feasibility Study
Excavation Areas

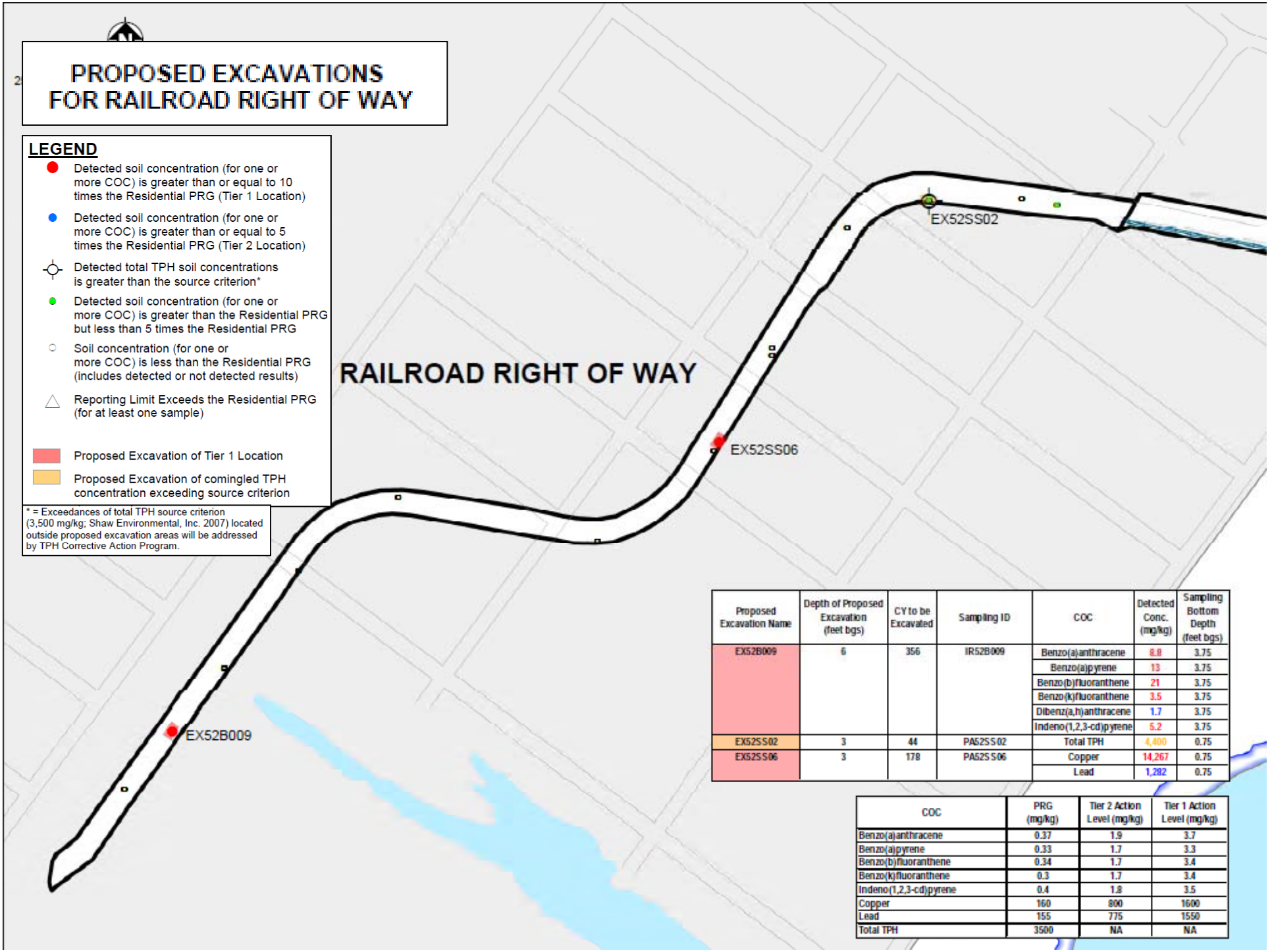
- The Parcel E FS identified potential excavation areas as
  - Tier 1 locations (10 times the residential RGs)
  - Tier 2 locations (5 times the residential RGs)
  - TPH locations (above the TPH source criterion)
- Three excavation areas were identified in the Railroad Right-of-Way
- None of the excavation areas identified in MU-3 are within Parcel UC-3
- Excavation areas were further defined in the Parcel E Soil Excavation Characterization (June 2013)
  - Collected samples to delineate the extend of contamination around the identified excavation areas



Proposed Excavation Name	Depth of Proposed Excavation (feet bgs)	CY to be Excavated	Sampling ID	COC	Detected Conc (mg/kg)	Bottom Sample Depth (feet bgs)
EX01SS350			IR01SS350	Aroclor-1260	1.4	0.5
EX04B011	4	933	IR04B011	Copper	10,400	1.75
				Lead	1,900	1.75
				Aroclor-1260	1.4	1.75
			IR04B032	Aroclor-1260	3.3	1.75
				Lead	1,071	1.75
EX04B012	8.5	504	IR04B012	Copper	5,230	1.75
				Lead	4,850	1.75
				Mercury	17	6.25
				Zinc	2,220	1.75
				Aroclor-1260	1.4	1.75
				Total TPH	1,520	2
EX04B015			IR04B015	Aroclor-1260	14.3	1.25
				Lead	3,166	1.25
				Antimony	65.0	1.25
				Copper	1,408	1.25
				Zinc	2,570	1.25
EX04B030			IR04B030	Antimony	409.4	1.25
				Aroclor-1260	8.89	1.25
				Copper	3,161	2.75
				Mercury	46.7	1.25
				Zinc	4,705	1.25
				Lead	6,915	1.25
				Antimony	57.0	2.75
EX04B034	4	59	IR04B034	Aroclor-1260	1.08	1.75
EX12SS02	2	30	IR12SS02	Lead	1,080	0
EX12TA13	6	366	IR12TA13B	Copper	3,400	3.75
EX56B021	4	59	IR56B021	Mercury	17.45	1.75
EX72SS23	2	119	IR72SS23	Zinc	5,400	0

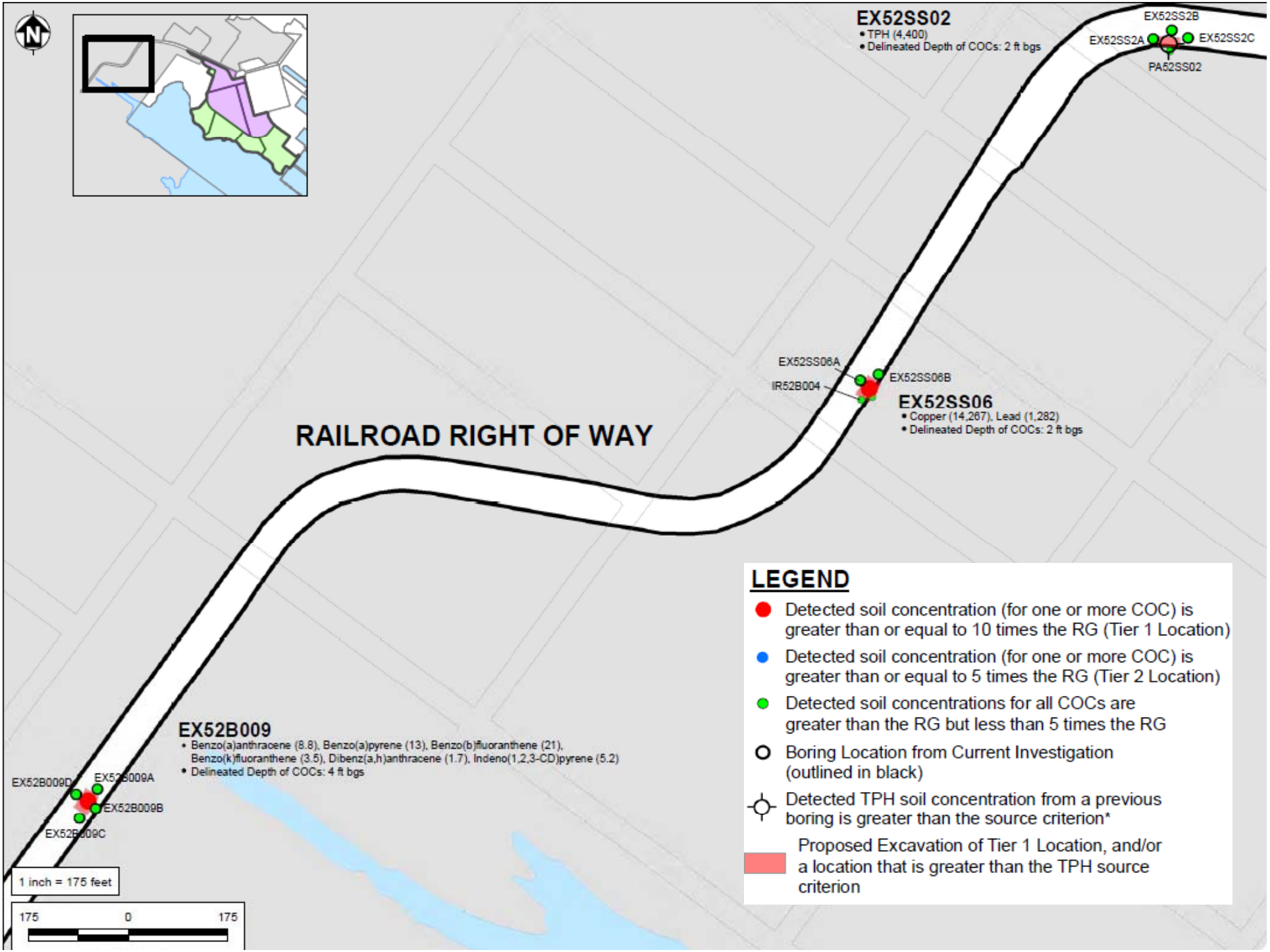
COC	PRG (mg/kg)	Tier 2 Action Level (mg/kg)	Tier 1 Action Level (mg/kg)
Antimony	10	50	100
Aroclor-1260	0.21	1.1	2.1
Copper	160	800	1600
Lead	155	775	1550
Mercury	2.28	11.4	22.8
Total TPH	3500	NA	NA
Zinc	370	1850	3700

PROPOSED EXCAVATIONS FOR RAILROAD RIGHT OF WAY



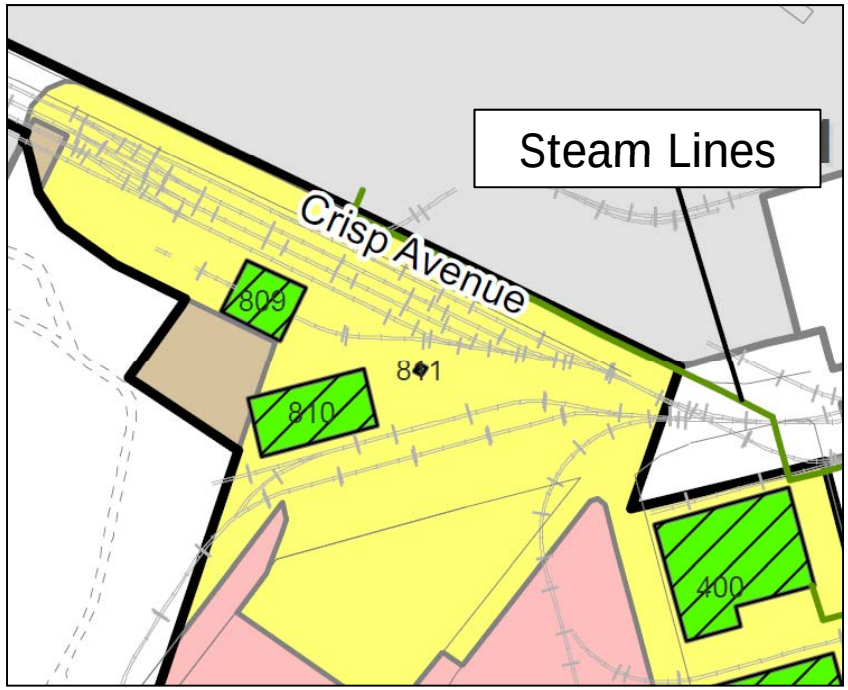
Proposed Excavation Name	Depth of Proposed Excavation (feet bgs)	CY to be Excavated	Sampling ID	COC	Detected Conc. (mg/kg)	Sampling Bottom Depth (feet bgs)
EX52B009	6	356	IR52B009	Benzo(a)anthracene	8.8	3.75
				Benzo(a)pyrene	13	3.75
				Benzo(b)fluoranthene	21	3.75
				Benzo(k)fluoranthene	3.5	3.75
				Dibenz(a,h)anthracene	1.7	3.75
				Indeno(1,2,3-cd)pyrene	5.2	3.75
EX52SS02	3	44	PA52SS02	Total TPH	4,400	0.75
EX52SS06	3	178	PA52SS06	Copper	14,267	0.75
				Lead	1,282	0.75

COC	PRG (mg/kg)	Tier 2 Action Level (mg/kg)	Tier 1 Action Level (mg/kg)
Benzo(a)anthracene	0.37	1.9	3.7
Benzo(a)pyrene	0.33	1.7	3.3
Benzo(b)fluoranthene	0.34	1.7	3.4
Benzo(k)fluoranthene	0.3	1.7	3.4
Indeno(1,2,3-cd)pyrene	0.4	1.8	3.5
Copper	160	800	1600
Lead	155	775	1550
Total TPH	3500	NA	NA


EX52SS02
• TPH (4,400)
• Delineated Depth of COCs: 2 ft bgs
EX52SS2B
EX52SS2A
EX52SS2C
PA52SS02
EX52SS06A
EX52SS06B
IR52B004
EX52SS06
• Copper (14,267), Lead (1,282)
• Delineated Depth of COCs: 2 ft bgs
RAILROAD RIGHT OF WAY
EX52B009
• Benzo(a)anthracene (8.8), Benzo(a)pyrene (13), Benzo(b)fluoranthene (21), Benzo(k)fluoranthene (3.5), Dibenz(a,h)anthracene (1.7), Indeno(1,2,3-CD)pyrene (5.2)
• Delineated Depth of COCs: 4 ft bgs
EX52B009D
EX52B009A
EX52B009B
EX52B009C
1 inch = 175 feet
175
0
175
LEGEND
Detected soil concentration (for one or more COC) is greater than or equal to 10 times the RG (Tier 1 Location)
Detected soil concentration (for one or more COC) is greater than or equal to 5 times the RG (Tier 2 Location)
Detected soil concentrations for all COCs are greater than the RG but less than 5 times the RG
Boring Location from Current Investigation (outlined in black)
Detected TPH soil concentration from a previous boring is greater than the source criterion*
Proposed Excavation of Tier 1 Location, and/or a location that is greater than the TPH source criterion

Parcel E Feasibility Study
Steam Lines

- Steam lines were previously used to heat buildings
- It is suspected that some of the lines were used to transfer waste oil between 1976 and 1986
  - Further investigation is required to determine which lines transferred oil
  - Based on excavations at other Parcels, it is estimated that 10% will require removal
- Lines with no evidence of oil contaminants will be closed in place



Parcel E Feasibility Study
Steam Lines

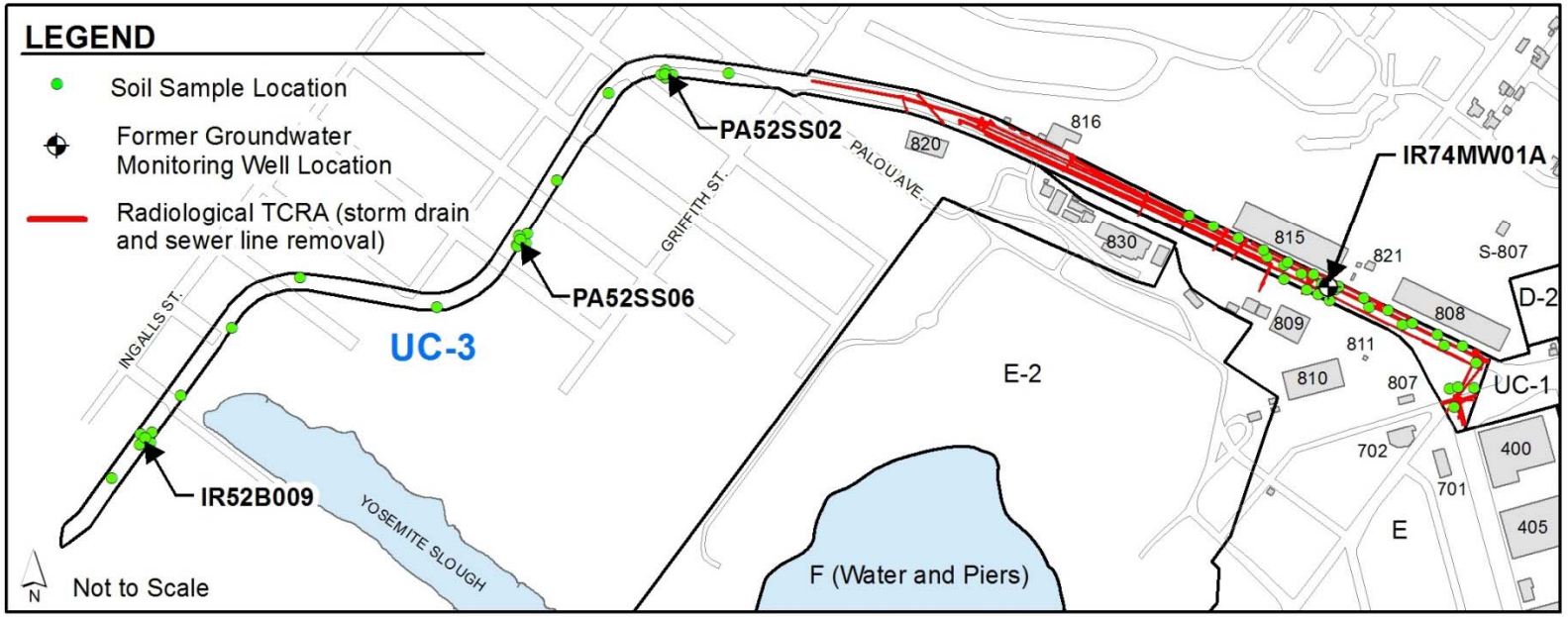
The following procedure was provided in the FS for steam line investigation and closure:

- Geophysical mapping of pipelines
- Asbestos abatement of protective wrap and pipe insulation
- Inspection and tightness testing of steam lines, with excavation to expose steam lines as needed
- Sampling and analysis of fluids or, if none, wipe sampling to identify pipe segments with potential impact to soil and groundwater; analyze for metals, VOCs, SVOCs, pesticides, PCBs, and TPH
- Pressure testing of pipeline segments where waste oil and contaminants were found
- Removal of pipeline segment that fail pressure test, and removal of residual fluids
- Pressure washing of remaining pipeline segments and confirmatory wipe samples
- Utilidor cleaning and inspection with excavation

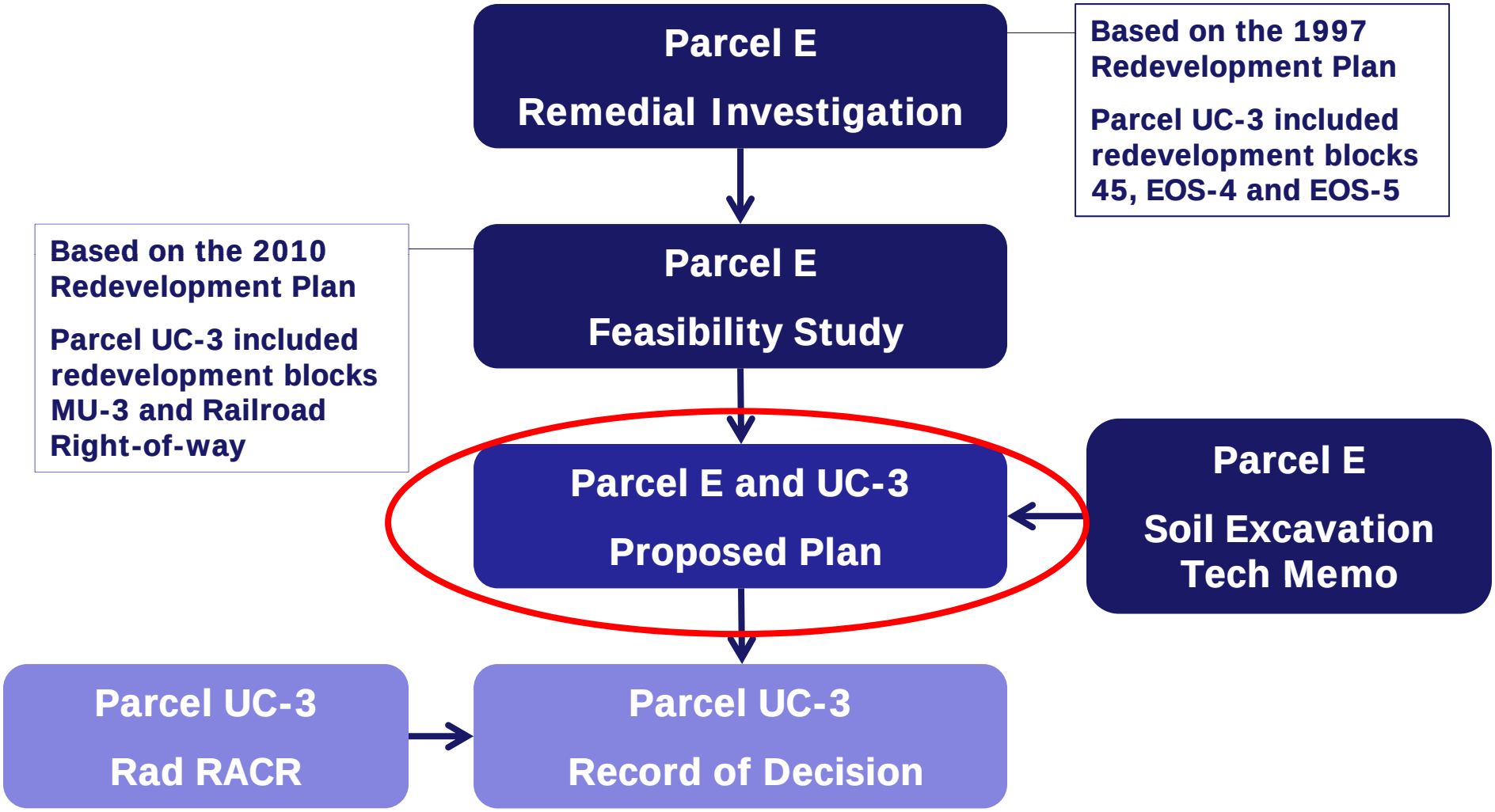
Detailed excavation and confirmation sampling plans will be developed in the RD if this alternative is selected.

Other Relevant Actions and Investigations

- Parcel E Groundwater Treatability Study, February 2011
  - The IR-56 Plume was not selected for the treatability study because TCE concentrations were equal to or lower than the screening criteria
- Radiological Removal Action for Parcel UC-3, March 2012
  - Radiological RACR submitted on March 16, 2012
  - Concurrence for unrestricted release was received from DTSC on October 31, 2012



Parcel UC-3 Summary



Parcel E and UC-3 Proposed Plan

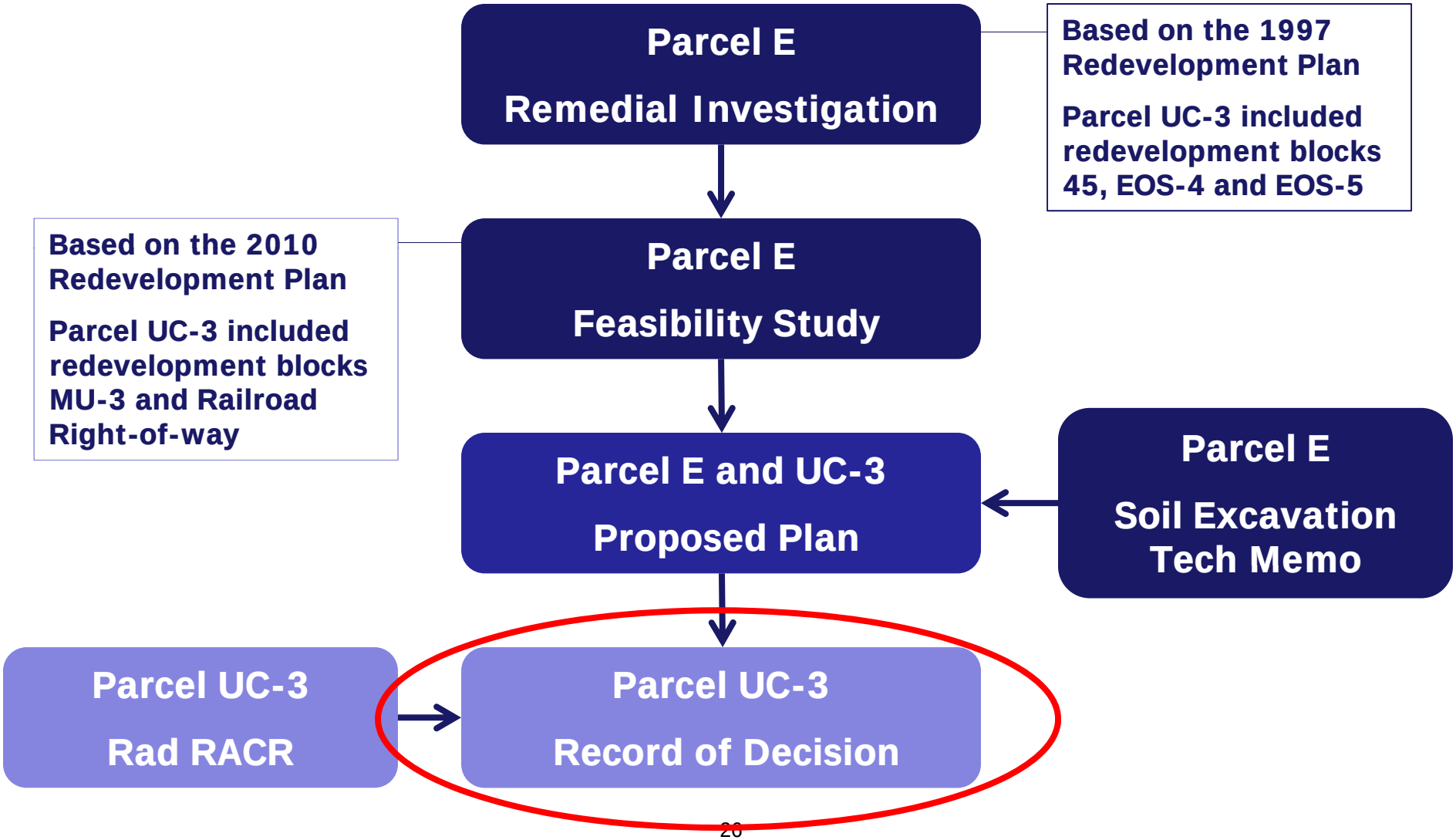
SUMMARY OF THE PREFERRED ALTERNATIVES

Preferred Alternatives for Parcels E and UC-3

- Alternative S-4, Excavation and Offsite Disposal of Tier 1 and Tier 2 Locations, followed by Covers, Soil Vapor Extraction, Institutional Controls (ICs), ~~and Shoreline Protection~~
- Alternative GW-3, Groundwater Containment, In-Situ Treatment, Monitored Natural Attenuation (MNA), and ICs
- ~~Alternative O-4, Source Removal or Treatment, In-Situ Groundwater Treatment, Containment, MNA, and ICs~~
- Alternative R-2, Survey, Removal, and Disposal ~~(with 2-foot-thick soil cover and ICs at IR-02 and IR-03)~~

Not applicable to Parcel UC-3

Parcel UC-3 Summary



Remedy at Parcel UC-3

Alternative S-4

- Excavation will be completed at the identified excavation areas at Railroad Right-of-Way
- Steam lines will be investigated and removed, as outlined in the FS
- A durable cover will be installed at MU-3 to prevent exposure to residual contaminants left in soil
  - Durable covers are not required in the Railroad Right-of-way because remaining soil will be below the RGs for industrial use
- Institutional Controls will be implemented to prevent exposure to contaminants left in soil

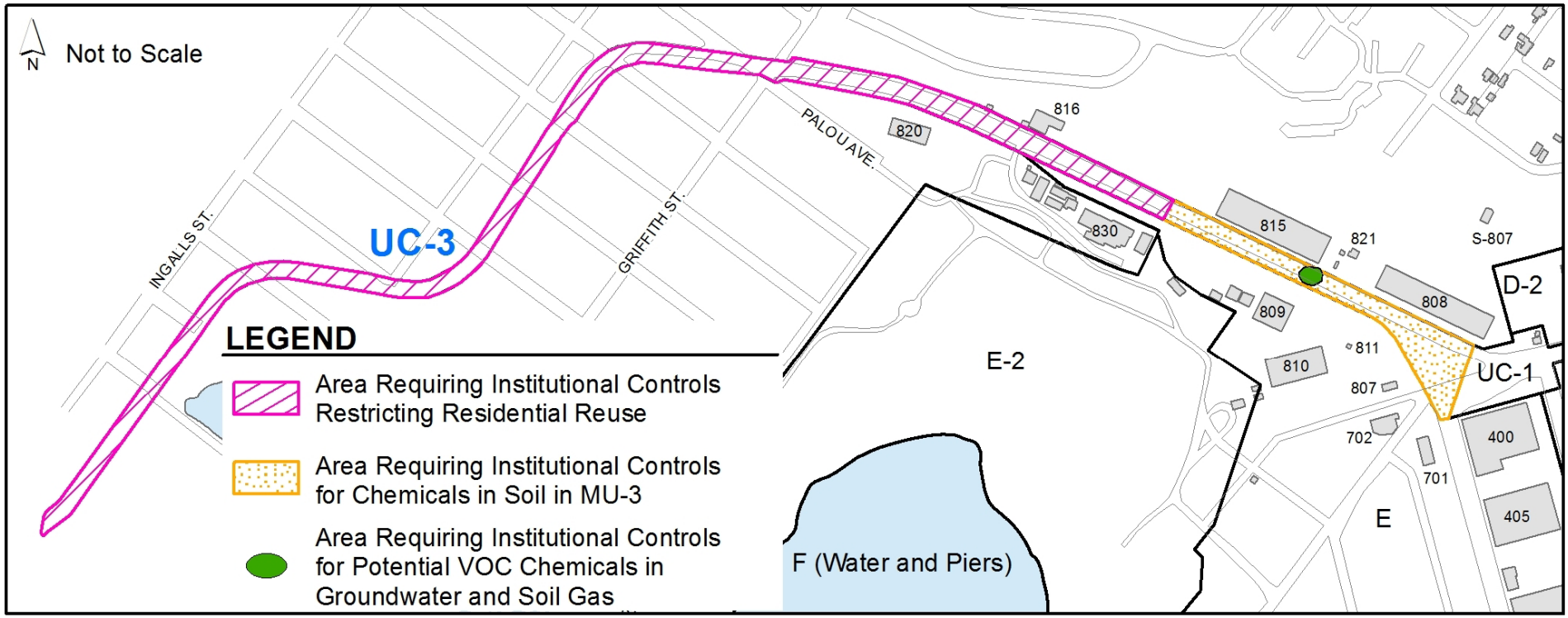
Alternative GW-3

- In Situ Treatment (if necessary) will be completed for the IR-56 plume, followed by monitored natural attenuation
- Institutional Controls will be implemented to prevent exposure to VOCs left in groundwater

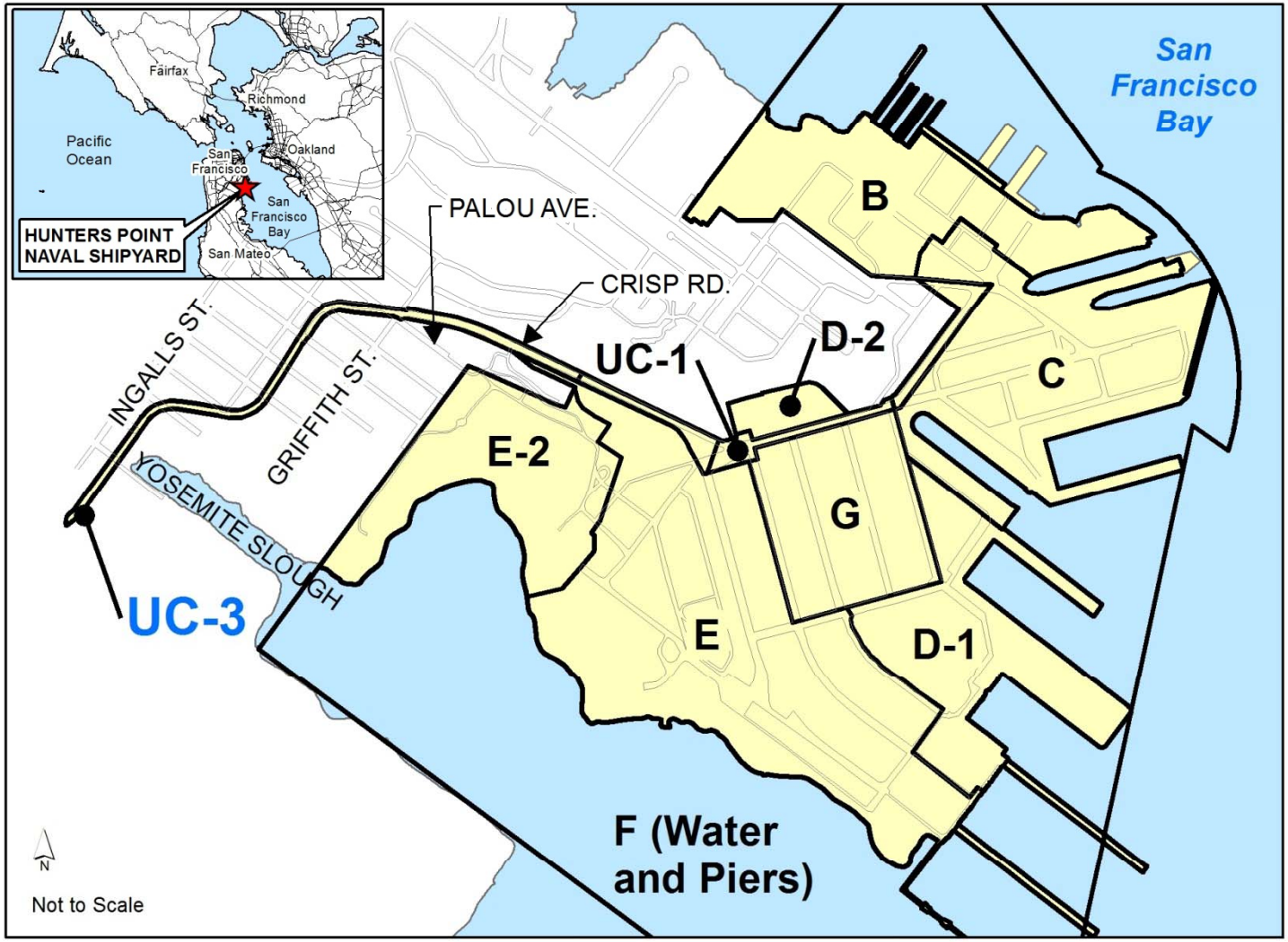
Alternative R-2

- Completed

Areas Requiring Institutional Controls at Parcel UC-3



Questions?


Fairfax
Richmond
Pacific Ocean
San Francisco
Oakland
San Francisco Bay
San Mateo
HUNTERS POINT NAVAL SHIPYARD
PALOU AVE.
CRISP RD.
INGALLS ST.
GRIFFITH ST.
YOSEMITE SLOUGH
UC-1
UC-3
D-2
B
C
E-2
G
E
D-1
F (Water and Piers)
San Francisco Bay
N
Not to Scale